

IT READINESS OF INSURANCE ORGANISATIONS IN SRI LANKA FOR INFORMATION SYSTEMS AUDITING



By

P. U. C. Pathinagoda



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

The Dissertation was submitted to the Department of Computer Science & Engineering of the University of Moratuwa in partial fulfillment of the requirement for the Degree of Master of Business Administration.

University of Moratuwa



86339

004"05"
004:65(043)

Department of Computer Science & Engineering

University of Moratuwa

December 2005

86339



86339

Declaration

"I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any University to the best of my knowledge and belief it does not contain any material previously published, written or orally communicated by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and summary to be made available to outside organizations"

P. U. C. Pathirajasinghe

Signature of the Candidate

Date: 29/12/2005



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

To the best of my knowledge, the above particulars are correct.

N. G. U. d.
30/12/2005

Supervisor

Abstract

The current trend in business world is to use IT wherever it's possible. So lots of manual systems and procedures have been replaced with Computer Systems over the years. There is no difference in the insurance industry also. Central Database, Data Warehousing, Online Fund Transferring and Corporate Websites or Intranet are no more strange terms in the insurance industry. But the controlling and detecting methods or in other words internal audit techniques have not been changed over the period accordingly. This is the area where traditional internal auditing lags and IS Auditing gains the lead. But in Sri Lanka where most of the CEOs are accountants who are not very familiar with IT still believe traditional Internal Auditing will do the job for them. As a result of it frauds, errors and mistakes have been increased in the insurance business during the last decade. This is a critical issue in an industry where a company has to look after customers' money for 20 to 30 years.

Insurance simply means sharing the risk among a large number of people in the society at a price. In Sri Lanka, there is a rapid growing interest about insurance is visible among people not only in Colombo & suburbs but also in remote areas. As a result of this trend, almost all the insurance companies invested heavily in the industry during last few years. At the same time all the insurance companies are in a heavy competition in order to increase their share in the market. Even though these companies use lot of tactics to improve the awareness about insurance, they have only captured less than 10% of the potential market or in other words less than 10% of the Sri Lankan population owns an insurance policy.

But as mentioned earlier if the tendency is to increase the number of frauds, errors and mistakes in the industry customers will loose their faith on insurance and it will hinder the growth of the industry. So the Information Systems Auditing in insurance industry can be recognized as an industry requirement under current circumstances. So in this research my objective was to develop a framework or a guideline to implement and practice IS Auditing in Sri Lankan Insurance organisations. So I think the two given guidelines in Chapter 6.2 will cater for an industry requirement in the Insurance industry in Sri Lanka.

Acknowledgement

I would like to acknowledge my gratitude to Dr. Neranjan Gunawardane, Senior lecturer of Department of Civil Engineering of University of Moratuwa, for his useful advices, guidance and suggestions, which greatly contributed towards the success of this research.

I pay my gratitude to everyone who contributed their time for being interviewed and for sharing their perceptions, attitudes, ideas some time even their most private information.

I thank my family members and my colleagues and the management of my office Ceylinco Insurance Company Ltd. for the support they have given me over the time.



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Contents

| | |
|---|---------|
| Acknowledgement | 1 |
| Contents | 2 - 6 |
| Chapter 1 – Introduction | |
| 1.1 Background | 7 - 8 |
| 1.2 Problems Identified | 9 - 10 |
| 1.3 Research Objectives | 10 |
| 1.4 The Method of Study Going to be adopted | 10 - 11 |
| 1.5 Literature Review | 11 - 12 |
| 1.6 Expected outcome of the research | 12 |
| Chapter 2 – Literature review | |
| 2.1 Previous researches on this Topic or similar Topics | 13 - 15 |
| 2.2 Fundamentals of Theories and Concepts that are relevant to the Topic and the research problem | |
| 2.2.1 Fundamentals of Insurance | 15 - 18 |
| 2.2.1.1 The Challenges for insurers today | 18 - 21 |
| 2.2.1.2 The impact of e-business on the insurance industry | 21 - 23 |
| 2.2.2 Fundamentals of Information Systems Audit | 24 |
| 2.2.2.1 Scope of Information Systems Auditing | 24 - 25 |
| 2.2.2.2 IS Audit and Control Association (ISACA) | 25 - 26 |
| 2.2.2.3 Standards for Information Systems Control Professional | 26 - 27 |
| 2.2.3 Risks associated with IT and E-business in Insurance | |
| 2.2.3.1 Risks associated with IT in Insurance | 28 - 33 |
| 2.2.3.2 Risks associated with E-business in Insurance | 34 - 35 |
| 2.3 The function of the IS Auditor in an Insurance Organization | 36 |
| 2.4 Limitations of the Traditional Internal Auditors in Sri Lanka | 37 |
| 2.5 Expected benefits of this research to the local insurance industry | 37 - 39 |



Chapter 3 – Methodology

| | |
|--|---------|
| 3.1 Model for the research project | 40 |
| 3.2 Research Methodology for assessment of IT Level and ISA Level in Insurance Organizations in Sri Lanka | 41 |
| 3.2.1 Developing the survey plan to collect information | 41 |
| 3.2.1.1 Assess the value of the research | 42 |
| 3.2.1.2 Specify the data collection method | 42 - 44 |
| 3.2.1.3 Sampling Plan | 44 - 50 |
| 3.2.1.4 Data Collection | 50 - 52 |
| 3.2.1.5 Specify the techniques of measurement | 53 |
| 3.2.2 Implementation of the survey plan (Collecting and analyzing data) | 54 |
| 3.2.2.1 Data Analysis | 54 - 55 |
| 3.2.2.2 Tabulate Information | 55 - 56 |
| 3.2.2.3 Facilitation to obtain required information | 57 |
| 3.2.2 Interpreting and reporting of findings | 57 |
| 3.3 Methodology to identify internationally recognised benchmark IS Audit Procedures | |
| 3.3.1 By studying industry recognized best practices by four big firms KPMG, E & Y, PriceWaterhouseCooper and Arthur Anderson | 57 - 58 |
| 3.3.2 By Studying Information Systems Audit Standards set by the Information Systems Audit and control Association (ISACA) of USA | 58 |
| 3.4 Methodology to identify the suitability of the internationally recognised benchmark IS Audit procedures to local insurance organizations | 59 |

Chapter 4 – Findings

| | |
|---|---------|
| 4.1 Findings related to the evaluation of existing Information Technology Level of insurance organisations of Sri Lanka | |
| 4.1.1 General View of the Sri Lankan Insurance Industry | 60 - 64 |
| 4.1.2 Information Technology decision making in Insurance Companies | 65 |
| 4.1.3 A Separate department for handling and managing IT operations | 65 |
| 4.1.4 Different divisions within the IT department | 66 |
| 4.1.5 Information related to the systems development | 66 -67 |

| | |
|--|---------|
| 4.1.6 Information Technology Role in Process Planning and Support | 67 - 68 |
| 4.1.7 Information Technology Role in Operations Support | 68 - 69 |
| 4.1.8 Information Technology Role in Sales & Marketing | 69 - 70 |
| 4.1.9 Online connectivity of the branches and the head office | 70 |
| 4.1.10 Method of Connectivity | 71 |
| 4.1.11 The Type of the System | 71 |
| 4.1.12 Networking & Communication facilities available in branch level | 72 |
| 4.1.13 Company Web site | 72 |
| 4.1.14 Development and maintenance of the web site | 73 |
| 4.1.15 When did The Insurance Company Built Its Web Site | 73 |
| 4.1.16 Basic Contents Of The Web Site | 74 |
| 4.1.17 Interactivity Of The Web Site | 74 - 75 |
| 4.1.18 Online Need Analysis & Real Time Quotations From The Web Site | 75 |
| 4.1.19 Services provide to Policyholders through Company website | 75 - 76 |
| 4.1.20 Handling Customer Inquires & Complains | 76 - 77 |
| 4.1.21 Mobile Commerce Applications (M-commerce for Policyholders) | 77 |
| 4.1.22 Idea About Providing M-Commerce Applications To Policyholders | 77 - 78 |
| 4.1.23 Any Insurance Products With Other Non-Insurance Companies | 78 |
| 4.1.24 Idea about Integrated Insurance Products / Services | 79 |
| 4.1.25 Method of Interacting With Business Partners | 79 - 80 |
| 4.1.26 Future Investments in Information Technology | 80 - 81 |
| 4.2 Findings related to the evaluation of existing Information Systems Audit | |
| Level of insurance organisations of Sri Lanka | |
| 4.2.1 General View of the Sri Lankan Insurance Industry | 81 - 82 |
| 4.2.2 Information Systems Audit decision making in Insurance Companies | 83 |
| 4.2.3 A Separate department for handling and managing ISA operations | 83 |
| 4.2.4 No of Staff Members in the IS Audit Department | 84 |
| 4.2.5 What is the capacity of the head of the IS Audit Department | 84 |
| 4.2.6 To whom the IS Audit Department is reported in your organization | 85 |
| 4.2.7 Information related to the IS Audit Process in your organization | 85 - 86 |
| 4.2.8 If you don't have a separate IS Audit Department then who handles ISA operations in your organization | 86 |



| | |
|--|-----------|
| 4.2.9 Information related to business Process Planning and Support by ISA | 87 |
| 4.2.10 Information related to Operations Support by ISA | 88 |
| 4.2.11 Technical Competence of ISA Staff in your organization | 89 |
| 4.2.12 ISA Infrastructure and Investment | 90 |
| 4.2.13 Annual expenditure on ISA as a percentage of expenditure on IT in the same year | 91 |
| 4.2.14 Annual expenditure on ISA as a percentage of total revenue of the Organization | 91 |
| 4.2.15 Frequency of IS Audit Assignments carried out in your organization | 92 |
| 4.3 Findings related to the survey on internationally recognized benchmark | 93 |
| IS Audit Procedures / Practices | |
| 4.3.1 Standards for Information Systems Auditing issued by the Standard Board of the Information Systems Audit and Control Association (ISACA) | 93 - 96 |
| 4.3.2 The Information Systems Audit Practicing Manual of KPMG Ford Rhodes, Thornton & Company Limited (used in 2004) | 96 - 103 |
| Chapter 5 – Discussion | |
| 5.1 Analysis of results of existing IT Level & ISA Level Assessment of Sri Lankan Insurance Organisation and identified Benchmark IS Audit Procedures and their suitability to Sri Lanka | 104 |
| 5.2 General View of the Sri Lankan Insurance Industry | 104 - 105 |
| 5.3 Existing IT level in insurance organizations in Sri Lanka | 106 - 107 |
| 5.3.1 Networking & Communication Facilities | 107 - 108 |
| 5.3.2 Customer Relations & Information Technology | 108 - 110 |
| 5.3.3 Business-to-Business Transactions & Information Technology | 110 |
| 5.3.4 Investments in IT | 110 - 111 |
| 5.3.5 The existing IT Level in insurance organizations in Sri Lanka | 111 |
| 5.4 Existing IS Audit level in insurance organizations in Sri Lanka | 112 - 115 |
| 5.4.1 Investments in IS Auditing | 115 - 116 |
| 5.4.2 The existing IS Audit Level in insurance organizations in Sri Lanka | 116 - 117 |



| | |
|--|-----------|
| 5.5 Evaluation of the suitability of identified benchmark IS Audit Standards / Procedures to insurance organizations in Sri Lanka | 117 - 119 |
|--|-----------|

Chapter 6 – Conclusions& Recommendations

| | |
|---------------------|-----------|
| 6.1 Conclusions | 120 - 122 |
| 6.2 Recommendations | 123 - 124 |

Appendix A

| | |
|--|-----------|
| A.1 IT Level Evaluation questionnaire for Insurance Organisations in SL | 125 - 135 |
| A.2 ISA Level Evaluation questionnaire for Insurance Organisations in SL | 136 - 142 |

Appendix B

| | |
|---|-----------|
| IT Level Assessment and ISA Level Assessment Information Tables | 143 - 145 |
|---|-----------|

Appendix C

| | |
|------------|-----------|
| References | 146 - 147 |
|------------|-----------|



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk